

<b>Notice of Allowability</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/630,871	CEBUHAR ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	David N. Spector	2873	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to FAOM.
2. ☒ The allowed claim(s) is/are 1-21.
3. ☐ The drawings filed on \_\_\_\_\_ are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☐ All    b) ☐ Some\*    c) ☐ None    of the:
    1. ☐ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).
  - \* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
  6. ☒ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
    - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
      - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
    - (b) ☒ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date 0804.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).**
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

- |  |  |
|--|--|
| 1. <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)            |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 6. <input type="checkbox"/> Interview Summary (PTO-413),<br>Paper No./Mail Date _____. |
| 3. <input checked="" type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),<br>Paper No./Mail Date <u>1103</u> | 7. <input type="checkbox"/> Examiner's Amendment/Comment                               |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit<br>of Biological Material                           | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance   |
|  | 9. <input checked="" type="checkbox"/> Other <u>DETAILED ACTION</u> .                  |

**DETAILED ACTION - ALLOWANCE**

1. Claims 1-21 are allowed. All claims thus being allowable, prosecution on the merits is closed in this application. A statement of the examiner's reasons for allowance is provided below in the following paragraph.

***Reasons for Allowance***

2. The instant application is deemed to be directed to a nonobvious improvement over the inventions of Jain et al. (WO 98/04950 A1) and/or Rohner (US 6097,361 A) disclosed by applicant as being representative examples in the art to which the instant invention pertains. In particular, said improvement provides novel methods/means for producing large numbers of grayscale levels in a maskless lithography system comprising a spatial light modulator, without increasing the number of discrete pixel states in that system; as recited, *inter alia*, in each of the instant independent claims 1, 8, 13, 17 and 19.

(a) Claims 1, 8, and 19 recite methods for producing grayscale on an object where the object is exposed to light in order to produce patterning thereupon which are distinguished by the recitation of step(s) therein for: "modulating an exposure time of the object" (Claim 1, Line 5) to produce a range of grayscale levels on the object; "modulating the power" (Claim 8, Line 5) of the light to produce a range of grayscale levels on the object; and by the step for "modulating an exposure time of the object to produce a first range of grayscale levels on the object" (Claim 19, Lines 5-6) recited in conjunction with the step for "modulating the power of the light beam to produce a second range of grayscale levels on the object" (Claim 19, Lines 7-8).

(b) Claim 13 recites a maskless lithography system wherein "a controller modulates the duration of time in which a light beam from a light source exposes an object" to produce a range of grayscale levels on said object (Claim 13, Lines 5-7).

(c) Claim 17 is drawn to a maskless lithography system for the practice of a particular embodiment of the method of independent claim 8; where the step for "modulating the power" in claim 17 comprises exposing an object to multiple overlapping patterns of light using a novel combination of optical elements recited therein (Claim 17, Lines 3-7).

(d) The prior art taken either singly or in combination fails to anticipate or fairly suggest the limitations of applicant's independent claims, in such a manner that a rejection under 35 U.S.C.

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102 or 103 would be proper. The claimed invention is therefore considered to be in condition for allowance as being novel and nonobvious over prior art.

***Other Remarks/Information***

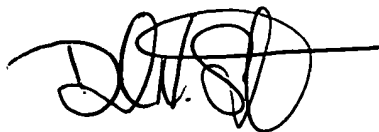
3. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

4. The drawings filed on 07/31/2003 appear to be informal. In order to avoid abandonment of this application, **NEW FORMAL DRAWINGS ARE REQUIRED IN REPLY TO THE OFFICE ACTION**. This requirement will not be held in abeyance.

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Jain et al. (US 6,312,134 B1) is based on the U.S. National Stage entry for PCT/US96/122240 (*e.g. published as WO 98/04950 A1*).

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to David N. Spector whose telephone number is (571) 272-2338. The examiner can normally be reached at this number Monday through Friday between 6:00 AM and 2:30 PM. The fax number for the organization where this application is assigned is (703) 872-9306.

August 19, 2004

A handwritten signature in black ink, appearing to read 'D. N. Spector', with a long horizontal line extending to the right.

DAVID N. SPECTOR  
PRIMARY EXAMINER